

CLAIMS

I claim:

1. A device adapted for displaying time in the form of a
selectable display pattern, comprising:
2. a storage device adapted for storing a plurality of
selectable display patterns;
3. an interface adapted for accepting at least one input from
an operator and in response to the input said interface selects
4. one of said selectable display patterns;
5. a plurality of display elements comprising a plurality of
hour display elements and a plurality of minute display elements
6. located proximate to a display area; and
7. a display elements controller in communication with a time
8. mechanism, said storage device, and said interface;
9. wherein each of said hour display elements has at least an
10. exhibiting state and a non-exhibiting state and is for
11. exhibiting state and a non-exhibiting state and is for
12. indication of 1 elapsed hour;
13. wherein an amount of display elements of said hour display
14. elements being in said exhibiting state of said hour display
15. elements indicates an elapsed number of hours in a day;
16. elements indicates an elapsed number of hours in a day;

19 wherein each of said minute display elements has at least
20 an exhibiting state and a non-exhibiting state and is for
21 indication of at least 1 elapsed minute, and wherein an amount
22 of display elements of said minute display elements being in
23 said exhibiting state of said minute display elements indicates
24 an elapsed number of minutes in an hour;

25 wherein said controller is in operable communication with
26 said hour display elements and said minute display elements
27 wherein said controller is adapted for switching each of said
28 hour display elements and said minute display elements at least
29 between said exhibiting state and said non-exhibiting state of
30 said hour display elements and said minute display elements,
31 respectively;

32 wherein said controller is adapted for receiving time
33 signals from the time mechanism and in response to the time
34 signals said controller outputs display control signals to said
35 hour display elements and said minute display elements whereby
36 an hours group pattern and a minutes group pattern,
37 respectively, of said one of said selectable display patterns
38 are exhibited proximate to the display area, and

39 wherein each of said hours group pattern and said minutes
40 group pattern is of discrete and discernable contrast relative

41 to the display area and is visually distinguishable from one
42 another.

1 2. The device according to claim 1, wherein each of said
2 hours group pattern and said minutes group pattern comprises a
3 plurality of subgroup patterns wherein each of said subgroup
4 patterns is able to be initiated by any display element within
5 that subgroup pattern, wherein a chronological sequence of
6 exhibition proximate to the display area among said subgroup
7 patterns of said hours group pattern is able to be initiated by
8 any display element within any one of said subgroup patterns of
9 said hours group pattern, and wherein a chronological sequence of
10 exhibition proximate to the display area among said subgroup
11 patterns of said minutes group pattern is able to be initiated by
12 any display element within any one of said subgroup patterns of
13 said minutes group pattern.

1 3. The device according to claim 2, wherein each subgroup
2 pattern of each of said hours group pattern and said minutes
3 group pattern is exhibited by a group of display elements
4 consisting of 2 display elements, 3 display elements, 4 display
5 elements, 5 display elements and 6 display elements.

1 4. The device according to claim 1, wherein said hours
2 group pattern and said minutes group pattern combine to form a
3 single display pattern.

1 5. The device according to claim 1, wherein each of said
2 hours group pattern and said minutes group pattern is selected
3 from a group of group patterns consisting of a first group
4 pattern of dots, a second group pattern of dots, a first group
5 pattern of lines, a second group pattern of lines, a first group
6 pattern of shapes and a second group pattern of shapes.

1 6. The device according to claim 1, wherein:

2 said hour display elements is selected from a group of hour
3 display elements consisting of 12 primary hour display elements
4 and 24 primary hour display elements wherein each primary hour
5 display element is for indication of 1 elapsed hour, and

6 said minute display elements is selected from a group of
7 minute display elements consisting of 60 primary minute display
8 elements wherein each primary minute display element is for
9 indication of 1 elapsed minute, 12 primary minute display
10 elements wherein each primary minute display element is for
11 indication of 5 elapsed minutes, and 12 primary minute display
12 elements and 4 secondary minute display elements wherein each
13 primary minute display element is for indication of 5 elapsed
14 minutes and each secondary minute display element is for
15 indication of 1 elapsed minute of a 4-minute period between each
16 5-minute interval.

1 7. The device according to claim 1, wherein said storage
2 device, said interface, said plurality of display elements and
3 said controller are manufactured as a single operating device.

1 8. The device according to claim 1, wherein said plurality
2 of display elements further comprises a plurality of second
3 display elements located proximate to the display area, wherein
4 each of said second display elements has at least an exhibiting
5 state and a non-exhibiting state and is for indication of at
6 least 1 elapsed second, wherein an amount of display elements of
7 said second display elements being in said exhibiting state of
8 said second display elements indicates an elapsed number of
9 seconds in a minute, whereby said controller is in operable
10 communication with said second display elements whereby a
11 seconds group pattern of said one of said selectable display
12 patterns is exhibited proximate to the display area as a result
13 of the output display control signals from said controller in
14 response to the time signals, and wherein said seconds group
15 pattern is of discrete and discernable contrast relative to the
16 display area and is visually distinguishable from said hours
17 group pattern and said minutes group pattern.

1 9. The device according to claim 8, wherein:

2 said hour display elements is selected from a group of hour
3 display elements consisting of 12 primary hour display elements
4 and 24 primary hour display elements wherein each primary hour
5 display element is for indication of 1 elapsed hour,

6 said minute display elements is selected from a group of
7 minute display elements consisting of 60 primary minute display
8 elements wherein each primary minute display element is for
9 indication of 1 elapsed minute, 12 primary minute display
10 elements wherein each primary minute display element is for
11 indication of 5 elapsed minutes, and 12 primary minute display
12 elements and 4 secondary minute display elements wherein each
13 primary minute display element is for indication of 5 elapsed
14 minutes and each secondary minute display element is for
15 indication of 1 elapsed minute of a 4-minute period between each
16 5-minute interval, and

17 said second display elements is selected from a group of
18 second display elements consisting of 60 primary second display
19 elements wherein each primary second display element is for
20 indication of 1 elapsed second, 12 primary second display
elements wherein each primary second display element is for
indication of 5 elapsed seconds, and 12 primary second display

23 elements and 4 secondary second display elements wherein each
24 primary second display element is for indication of 5 elapsed
25 seconds and each secondary second display element is for
26 indication of 1 elapsed second of a 4-second period between each
27 5-second interval.

1 10. The device according to claim 1, wherein said
2 plurality of display elements further comprises a plurality of
3 day display elements located proximate to the display area,
4 wherein each of said day display elements has at least an
5 exhibiting state and a non-exhibiting state and is for
6 indication of 1 elapsed day in a week, wherein an amount of
7 display elements of said day display elements being in said
8 exhibiting state of said day display elements indicates an
9 elapsed number of days in a week, whereby said controller is in
10 operable communication with said day display elements whereby a
11 days group pattern of said one of said selectable display
12 patterns is exhibited proximate to the display area as a result
13 of the output display control signals from said controller in
14 response to the time signals, and wherein said days group
15 pattern is of discrete and discernable contrast relative to the
display area and is visually distinguishable from said hours
group pattern and said minutes group pattern.

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1 11. The device according to claim 1, wherein said
2 plurality of display elements further comprises a plurality of
3 date display elements located proximate to the display area,
4 wherein each of said date display elements has at least an
5 exhibiting state and a non-exhibiting state and is for
6 indication of at least 1 elapsed day in a month, wherein an
7 amount of display elements of said date display elements being
8 in said exhibiting state of said date display elements indicates
9 an elapsed number of days in a month, whereby said controller is
10 in operable communication with said date display elements
11 whereby a date group pattern of said one of said selectable
12 display patterns is exhibited proximate to the display area as a
13 result of the output display control signals from said
14 controller in response to the time signals, and wherein said
15 date group pattern is of discrete and discernable contrast
16 relative to the display area and is visually distinguishable
17 from said hours group pattern and said minutes group pattern.

1 12. The device according to claim 11, wherein said
2 plurality of display elements further comprises a plurality of
3 month display elements located proximate to the display area,
4 wherein each of said month display elements has at least an
5 exhibiting state and a non-exhibiting state and is for
6 indication of at least 1 elapsed month, wherein an amount of
7 display elements of said month display elements being in said
8 exhibiting state of said month display elements indicates an
9 elapsed number of months in a year, whereby said controller is
10 in operable communication with said month display elements
11 whereby a month group pattern of said one of said selectable
12 display patterns is exhibited proximate to the display area as a
13 result of the output display control signals from said
14 controller in response to the time signals, and wherein said
15 month group pattern is of discrete and discernable contrast
16 relative to the display area and is visually distinguishable
17 from said hours group pattern, said minutes group pattern, and
18 said date group pattern.

1 13. The device according to claim 12, wherein said
2 interface further comprises a pattern toggle member being able
3 to be placed in either of a first position and a second
4 position, whereby a first display comprising at least one of
5 said hours group pattern, said minutes group pattern, said date
6 group pattern and said months group pattern is displayed when
7 said pattern toggle member is in said first position, whereby a
8 second display comprising at least one of said hours group
9 pattern, said minutes group pattern, said date group pattern and
10 said months group pattern is displayed when said pattern toggle
11 member is in said second position, and wherein said first
12 display and said second display are visually distinguishable
13 from one another.

1 14. The device according to claim 12, wherein said
2 interface further comprises a time display toggle member being
3 able to be placed in either of a first position and a second
4 position, whereby a first display comprising said hours group
5 pattern and said minutes group pattern is displayed when said
6 time display toggle member is in said first position, and
7 whereby a second display comprising a numerical time pattern is
8 displayed when said time display toggle member is in said second
9 position.

1 15. The device according to claim 12, wherein said
2 interface further comprises a time display toggle member
3 switching said display elements between a first display state
4 consisting of said hours group and said minutes group for
5 displaying time only, a second display state consisting of said
6 month group and said date group for displaying a date only, and
7 a third display state comprising said month group, said date
8 group, said hours group and said minutes group for displaying
9 both the time and date.

1 16. The device according to claim 1, further comprising a
2 projection machine connected to said storage device and said
3 interface for projecting an image of said display elements on a
4 display area.

1 17. A device adapted for displaying time in the form of a
2 selectable display pattern, comprising:

3 a storage device adapted for storing a plurality of
4 selectable display patterns;

5 an interface adapted for accepting at least one input from
6 an operator and in response to the input said interface selects
7 one of said selectable display patterns;

8 a housing comprising a display area, wherein said display
9 area is adapted for displaying said one of said selectable
10 display patterns;

11 a plurality of display elements comprising a plurality of
12 hour display elements and a plurality of minute display elements
13 located proximate to said display area;

14 a display elements controller in communication with a time
15 mechanism, said storage device, and said interface;

16 wherein each of said hour display elements has at least an
17 exhibiting state and a non-exhibiting state and is for
18 indication of 1 elapsed hour, and wherein an amount of display
19 elements of said hour display elements being in said exhibiting
20 state of said hour display elements indicates an elapsed number
of hours in a day;

22 wherein each of said minute display elements has at least
23 an exhibiting state and a non-exhibiting state and is for
24 indication of at least 1 elapsed minute, and wherein an amount
25 of display elements of said minute display elements being in
26 said exhibiting state of said minute display elements indicates
27 an elapsed number of minutes in an hour;

28 wherein said controller is in operable communication with
29 said hour display elements and said minute display elements
30 wherein said controller is adapted for switching each of said
31 hour display elements and said minute display elements at least
32 between said exhibiting state and said non-exhibiting state of
33 said hour display elements and said minute display elements,
34 respectively;

35 wherein said controller is adapted for receiving time
36 signals from the time mechanism and in response to the time
37 signals said controller outputs display control signals to said
38 hour display elements and said minute display elements whereby
39 an hours group pattern and a minutes group pattern,
40 respectively, of said one of said selectable display patterns
41 are exhibited proximate to said display area; and

42 wherein each of said hours group pattern and said minutes
43 group pattern is of discrete and discernable contrast relative

44 to said display area and is visually distinguishable from one
45 another.

1 18. The device according to claim 17, wherein each of said
2 hours group pattern and said minutes group pattern comprises a
3 plurality of subgroup patterns wherein each of said subgroup
4 patterns is able to be initiated by any display element within
5 that subgroup pattern, wherein a chronological sequence of
6 exhibition proximate to said display area among said subgroup
7 patterns of said hours group pattern is able to be initiated by
8 any display element within any one of said subgroup patterns of
9 said hours group pattern, and wherein a chronological sequence of
10 exhibition proximate to said display area among said subgroup
11 patterns of said minutes group pattern is able to be initiated by
12 any display element within any one of said subgroup patterns of
13 said minutes group pattern.

1 19. The device according to claim 18, wherein each
2 subgroup pattern of each of said hours group pattern and said
3 minutes group pattern is exhibited by a group of display
4 elements consisting of 2 display elements, 3 display elements, 4
5 display elements, 5 display elements and 6 display elements.

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1 20. The device according to claim 17, wherein said hours
2 group pattern and said minutes group pattern combine to form a
3 single display pattern.

1 21. The device according to claim 17, wherein each of said
2 hours group pattern and said minutes group pattern is selected
3 from a group of group patterns consisting of a first group
4 pattern of dots, a second group pattern of dots, a first group
5 pattern of lines, a second group pattern of lines, a first group
6 pattern of shapes and a second group pattern of shapes.

1 22. The device according to claim 17, wherein:

2 said hour display elements is selected from a group of hour

3 display elements consisting of 12 primary hour display elements

4 and 24 primary hour display elements wherein each primary hour

5 display element is for indication of 1 elapsed hour; and

6 wherein said minute display elements is selected from a

7 group of minute display elements consisting of 60 primary minute

8 display elements wherein each primary minute display element is

9 for indication of 1 elapsed minute, 12 primary minute display

10 elements wherein each primary minute display element is for

11 indication of 5 elapsed minutes, and 12 primary minute display

12 elements and 4 secondary minute display elements wherein each

13 primary minute display element is for indication of 5 elapsed

14 minutes and each secondary minute display element is for

15 indication of 1 elapsed minute of a 4-minute period between each

16 5-minute interval.